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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,548	02/14/2002	Swatee N. Surve	05127.00138	3233
22909	7590	06/02/2004	EXAMINER	
BANNER & WITCOFF, LTD. 1001 G STREET, N.W. WASHINGTON, DC 20001-4597			MUROMOTO JR, ROBERT H	
			ART UNIT	PAPER NUMBER
			3765	

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/077,548	SURVE, SWATEE N.	
	Examiner	Art Unit	
	Robert H Muromoto, Jr.	3765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because the recitation "Fibers are disclosed..." and the abstract recites the purported merits of the invention. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-22, 24 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Post et al. '771.

Post discloses the fabrication of electronic devices and circuits, and in particular to the integration of such devices and circuits into textiles (fabrics, clothing material). Post discloses a fabric woven with non-conductive fibers in the warp and a conductive fiber in the weft. The conductive fibers 110 may be continuously adjacent along the weft (substrate). The fibers of the fabric are used to create electrical circuits. The leads of a resistor and a **capacitor** 122 (claim 11, 21), as well as the pins of an integrated circuit 124 are soldered to single fibers of the fabric 100 (col.4, lines 15-51). A fabric comprising a woven matrix of conductive fibers running in both directions can be used to capacitively or electrically couple electronic components, or in sheet form can serve as an electrostatic antenna (claim 10, 20).

To prevent fibers 110 from making unwanted contact as a result of folding, the fabric 100 may be provided with a non-conductive (insulating, protective, shield, claims 4-8, and 14-18) coating (e.g., a transparent acrylic coating that may be sprayed on) following affixation of the electronic components. Alternatively, an insulating layer 135 may be applied to one or both sides of the fabric 100. Insulating layer can, if desired, be a textile with handling characteristics similar to those of the fabric 100 (col. 4, lines 58-65).

Electrically active textiles can also be created by sewing, embroidery or weaving of conductive material into a substantially non-conductive fabric matrix or substrate. Typically, the threads are formed by spinning together fibers of a polymer (plastic, claim 24) such as KEVLAR® with fibers of a metal.

Another embodiment uses an elastic (e.g., foam, claim 25) panel to provide resistance in a switching mechanism for the circuit.

In yet another embodiment, the strips of conductor material may be coated with a semiconductor to form nonlinear thresholding elements at the overlap regions that prevent false contacts and/or phantom switching. The use of the semiconductor makes the electrical component a transistor, as recited by the applicant in claims 9 and 19.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Post et al., in view of Skszek.

Although Post teaches essentially all of the limitations of the instant invention there is no teaching of using a laser spray process to form the electrical components on the fibers.

However, Skszek teaches a process of laser-based direct-metal disposition (spray) to provide unique physical and mechanical properties including structural strength, and wear resistance to laminate composite materials, which include metal in the structure.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use a laser spray process to form the electrical components on the fibers of the fabric of Post, rather than soldering the metal components onto the fibers, to take advantage of the increased structural strength and wear resistance of the laser based disposition process.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Post et al., in view of Carroll.

Although Post teaches essentially all of the limitations of the instant invention, there is no teaching of using either synthetic or natural leather as a clothing material.

However, Carroll teaches a wearably personal computer system which uses leather as an inexpensive and flexible material in a garment formed with electrical components integrated within the structure. Leather is a very well known material in all types of apparel, and can be easily produced at relatively low cost.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use leather as the flexible material of an electronically active garment.

Response to Arguments

Applicant's arguments filed 3/26/2004 have been fully considered but they are not persuasive. Applicant argues that Post does not teach "forming an electronic component on either a fiber or over a surface of a piece of clothing material".

It is the examiner's position that Post clearly shows the forming of an electronic component on a fiber or over a surface of cloth material. Especially important disclosures from Post have been italicized above for emphasis, no new recitations have been added to the previous rejection.

As evidence the examiner uses the language provided directly from the applicant's remarks filed 3/26/2004. "...Post describes fabric material wherein the fibers themselves are used to conduct electricity to or from electronic components." This statement alone states that the fibers which are a "surface of a piece of clothing material" are used to conduct electricity. If the fibers conduct electricity then they are part of the "electronic component".

Additionally, also taken from the applicant's remarks, "...electronic components are then connected to the conductive fibers by, e.g., soldering..." This statement describes the forming of an electronic component over the surface of a cloth material. The "electronic component" is soldered to the fabric, which is equivalent to "forming over a surface of a piece of clothing material.", as recited in the claims.

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When using the broadest reasonable interpretation, Post clearly anticipates the limitation, "forming an electronic component on either a fiber or over a surface of a piece of clothing material." A direct quotation from Post reads, "The fibers of the fabric are used to create electrical circuits.", electrical circuits are certainly "electronic components" under any definition. The previous rejection remains and is considered proper.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert H Muromoto, Jr. whose telephone number is 703-306-5503. The examiner can normally be reached on 8-530, M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Calvert can be reached on 703-305-1025. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bhm
May 27, 2004


JOHN S. CALVERT
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700